

Title (en)
TRANSMISSION CODE PROCESSING DEVICE, TRANSMISSION CODE PROCESSING METHOD, AND OPTICAL TRANSMITTER

Title (de)
VORRICHTUNG ZUR VERARBEITUNG VON ÜBERTRAGUNGSCODES, VERFAHREN ZUR VERARBEITUNG VON ÜBERTRAGUNGSCODES UND OPTISCHER SENDER

Title (fr)
DISPOSITIF ET PROCÉDÉ DE TRAITEMENT DE CODE DE TRANSMISSION ET TRANSMETTEUR OPTIQUE

Publication
EP 4203402 A4 20231108 (EN)

Application
EP 20958689 A 20201021

Priority
JP 2020039634 W 20201021

Abstract (en)
[origin: EP4203402A1] A transmission code processing device (100) includes: a signal point arrangement shaping encoding unit (110) to perform signal point arrangement shaping encoding, and perform conversion into a shaped bit of mi column; a systematic error correction encoding unit (120) to perform systematic error correction encoding by using the shaped bit as an information bit, and generate a parity bit of mp column; a first symbol mapping unit (130) to convert the shaped bit into a first modulation symbol; a second symbol mapping unit (140) to convert the parity bit into a second modulation symbol; and a symbol multiplexing unit (150) to generate a third modulation symbol by multiplexing the first modulation symbol and the second modulation symbol, in which the first modulation symbol has a signal point element in a first signal point set including ci signal point including an origin, the second modulation symbol has a signal point element in cp signal point not including the origin, and the signal point arrangement shaping encoding unit (110) performs signal point arrangement shaping in which the first modulation symbol has a signal point element included in the first signal point set.

IPC 8 full level
H04L 27/00 (2006.01); **H04B 10/516** (2013.01); **H04L 1/00** (2006.01); **H04L 27/26** (2006.01); **H04L 27/34** (2006.01)

CPC (source: EP US)
H04B 10/516 (2013.01 - EP US); **H04L 1/0042** (2013.01 - EP); **H04L 1/0047** (2013.01 - EP); **H04L 1/0058** (2013.01 - EP); **H04L 27/3405** (2013.01 - EP); **H04L 27/3411** (2013.01 - EP)

Citation (search report)

- [I] US 2020287756 A1 20200910 - RAZZETTI LUCA GABRIELE [IT], et al
- [I] US 2020119840 A1 20200416 - EBRAHIMZAD HAMID [CA], et al
- [ID] YOSHIDA TSUYOSHI ET AL: "Hierarchical Distribution Matching for Probabilistically Shaped Coded Modulation", JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE, USA, vol. 37, no. 6, 15 March 2019 (2019-03-15), pages 1579 - 1589, XP011717097, ISSN: 0733-8724, [retrieved on 20190329], DOI: 10.1109/JLT.2019.2895065
- [AD] BOCHERER GEORG ET AL: "Bandwidth Efficient and Rate-Matched Low-Density Parity-Check Coded Modulation", IEEE TRANSACTIONS ON COMMUNICATIONS, IEEE SERVICE CENTER, PISCATAWAY, NJ. USA, vol. 63, no. 12, 1 December 2015 (2015-12-01), pages 4651 - 4665, XP011593618, ISSN: 0090-6778, [retrieved on 20151215], DOI: 10.1109/TCOMM.2015.2494016
- [A] ELZANATY AHMED ET AL: "Adaptive Coded Modulation for IM/DD Free-Space Optical Backhauling: A Probabilistic Shaping Approach", IEEE TRANSACTIONS ON COMMUNICATIONS, IEEE SERVICE CENTER, PISCATAWAY, NJ. USA, vol. 68, no. 10, 10 July 2020 (2020-07-10), pages 6388 - 6402, XP011814994, ISSN: 0090-6778, [retrieved on 20201015], DOI: 10.1109/TCOMM.2020.3006575
- See also references of WO 2022085137A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
EP 4203402 A1 20230628; EP 4203402 A4 20231108; CN 116325674 A 20230623; CN 116325674 B 20240621; JP 7175434 B2 20221118; JP WO2022085137 A1 20220428; US 2023208526 A1 20230629; WO 2022085137 A1 20220428

DOCDB simple family (application)
EP 20958689 A 20201021; CN 202080105910 A 20201021; JP 2020039634 W 20201021; JP 2022555935 A 20201021; US 202318168250 A 20230213